

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Applicants note with appreciation the indication of allowability for Claims 2-6, 8 and 9. It is nonetheless respectfully submitted that all of the claims define over the prior art.

Claims 1 and 7 were rejected under 35 U.S.C. §103 as being obvious over PCT publication WO01/78911 (Costantini) in view of U.S. patent 3,420,633 (Lee). In this regard, the Office Action recognized that Costantini fails to teach a packing material provided in a separator or a step of refining the separated gas using an absorbent, but deemed that it would have been obvious in view of Lee to have included such packing material in the separator 61 of Costantini, and to have included a step of refining a separated gas using an absorbent in Costantini. This rejection is respectfully traversed.

According to the claimed invention, a fluid partially refined by separating means having a packing is further refined by an absorbent. Namely, liquid ingredients containing unnecessary materials are removed out of the system as a waste in the separator, and gas ingredients from the separator, containing small amounts of unnecessary materials, are further refined by the absorbent means. As is described on page 15, lines 14-23 in the present specification, a fluid to be processed cannot be completely refined only by the separating means. Purification using absorbent means, after refining by separating means, provides a remarkable effect in refinement of the fluid to be processed, since unnecessary materials which have a high affinity for the material of the fluid to be refined, and which are mixed in the gaseous medium-pressure fluid, can be eliminated by the absorbent means. This is not taught by the cited prior art.

Costantini discloses a supercritical fluid delivery and recovery system for semiconductor wafer processing, in which a supercritical fluid used to strip solvents or photoresist resins from wafers is recovered. As part of this, an effluent from a processing

chamber 37, which is to be purified, is introduced into separators 56 and 61. However, as the Office Action has recognized, the separators of Costantini do not include packing materials, nor does Costantini teach an absorbent for refining the separated gas from the separators.

Lee discloses a process for purifying a hydrogen gas. The Office Action regards solution regenerator 44 in Lee as a unit corresponding to the separating means in the present invention. However, tower 17 more accurately corresponds to the separating means in the present invention. A hydrogen bearing fluid to be refined and containing impurities is supplied via stream 16 to tower 17 which is provided with packed section 18. Hydrogen gas free of impurities is then removed from the tower 17 via stream 20. Fluid containing impurities is removed from the tower 17 via stream 21 (column 3, line 61 to column 4, line 4).

The Office Action considers that Lee teaches providing the separator 61 of Costantini with a packing. However, even if this were so, Lee nonetheless fails to teach a step of refining the hydrogen gas from the separator having a packing, using an absorbent. Instead, the hydrogen gas separated in the separator 17 of Lee is simply discharged as stream 20 without further processing. Since Lee does not further process the separated hydrogen gas in stream 20 using an absorbent, it cannot teach modifying Costantini to provide such a step.

Applicants note that the Office Action has relied on the use of purification unit 33 of Lee, which contains activated carbon, to teach a step of refining the hydrogen gas from the separator 61 of Costantini using an absorbent. However, it is respectfully submitted that this reliance is misplaced. Lee does disclose absorbing means (activated carbon or other hydrogen sulfide absorbent) in a purification unit 33. However, the purification unit 33 is not used to further process the hydrogen separated in the separator 17, but is instead used for purifying carbon dioxide which has been separated from a hydrogen rich fluid containing carbon dioxide as an impurity, in a separator 31 lacking a packing (column 4, lines 37-46).

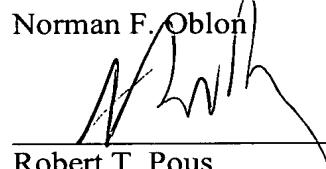
Therefore the purification unit 33 of Lee would not have rendered it obvious to have modified Costantini to refine the separated gas from the separator 61 using an absorbent.

Applicants therefore believe that the present application is in condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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